

Your name: _____

Part 1 – Multiple Choice: Select the best answer to each of the following questions. Write your answer on the blank space provided here.

1	2	3	4	5	6	7	8	9	10
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1. Which of the following is exactly the same as O_2F_2 ?

- a) OF
- b) O_3F_3
- c) O_4F_4
- d) all of the above
- e) none of the above

2. How many atoms of hydrogen are in ammonium sulfate, $(\text{NH}_4)_2\text{SO}_4$?

- a) 2
- b) 4
- c) 8
- d) 12
- e) 42

6. Which of the following **does** dissolve in water?

- a) CuSO_4
- b) ZnS
- c) $\text{Ca}_3(\text{PO}_4)_2$
- d) AlF_3
- e) AgI

7. What is the name of the compound PbO_2 ?

- a) lead (II) oxide
- b) lead (IV) oxide
- c) lead dioxide
- d) monolead oxide
- e) lead oxygen

10 K3. $\text{Ca} + \text{AgNO}_3 \rightarrow \text{Ca}(\text{NO}_3)_2 + \text{Ag}$ is an example of which type of reaction?

- a) synthesis
- b) decomposition
- c) single displacement
- d) double displacement
- e) combustion

8. Which of the following is **hydrofluoric acid**?

- a) H_2F
- b) HFO_3
- c) HF
- d) H_3F_2
- e) H_2OF

4. Which of the following elements will replace cobalt in a single displacement reaction?

- a) magnesium
- b) nickel
- c) hydrogen
- d) (a) and (b)
- e) (a), (b) and (c)

9. Which of the following contributes to making acid rain?

- a) N_2
- b) NH_3
- c) HBr
- d) SO_3
- e) $\text{Ca}(\text{OH})_2$

5. What is the correct formula for Ammonium Sulfide?

- a) NH_4SO_3
- b) $(\text{NH}_4)_2\text{S}$
- c) $(\text{NH}_4)_2\text{SO}_4$
- d) $(\text{NH}_4)_3\text{SO}_4$
- e) NH_4S

10. Which of the following combinations would give a neutralization reaction?

- a) $\text{LiOH} + \text{Ca}(\text{NO}_3)_2$
- b) $\text{H}_3\text{PO}_4 + \text{CH}_4$
- c) $\text{SnCl}_6 + \text{BeF}_2$
- d) $\text{Cu} + \text{AlF}_3$
- e) $\text{HI} + \text{KOH}$

11	12	13	14	15	16	17	18	-----	-----
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11. What is the only material in the world to have a pH of exactly 7?

- a) tap water
- b) spring water
- c) distilled water
- d) pool water, after you add pH pellets
- e) urine

15. What are the products of this neutralization reaction: $\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow$

- a) H_2O and NaSO_4
- b) H_2OH and NaSO_4
- c) NaH_2 and OHSO_4 (also known as HSO_5)
- d) H_2O , Na and SO_4
- e) H_2O and Na_2SO_4

12. Which of the following is not a **base**?

- a) NaOH
- b) $\text{Ca}(\text{OH})_2$
- c) $\text{Al}(\text{OH})_3$
- d) LiOH
- e) CH_3COOH

16. Which of the following does not represent an **acidic** pH?

- a) 8
- b) 6
- c) 1
- d) 0
- e) -1

8 K

13. Which of the following are products of **combustion** reactions?

- a) CO_2
- b) H_2O
- c) O_2
- d) (a) and (b)
- e) (a), (b) and (c)

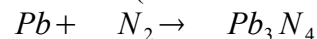
17. How many atoms of hydrogen (H) are in a molecule of $\text{NH}_4\text{CH}_3\text{OO}$?

- a) 3
- b) 4
- c) 7
- d) 12
- e) 43

14. Which of the following does **not** characterize ionic compounds?

- a) Usually solid
- b) Conducts electricity as a solid
- c) Conducts electricity when dissolved in water
- d) High melting point
- e) Soluble in water

18. Balance this reaction (no fractions allowed):



What is the coefficient on N_2 ?

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5

Part 2 – Naming

1. Write the proper name for each of the following compounds in the space provided.

K_3P _____

SCl_2 _____

CuO _____

NH_4F _____

$Fe_2(SO_4)_3$ _____

$FePO_4$ _____

12 A

$Al(CN)_3$ _____

CO _____

CaS _____

O_2F_2 _____

N_2O_5 _____

$Co_2(CO_3)_3$ _____

2. Write the chemical formula for each of the following compounds in the space provided.

lithium hydride _____

ammonium carbonate _____

lead (IV) sulfide _____

calcium sulfide _____

cobalt (II) phosphate _____

barium carbonate _____

12 A

sodium nitride _____

nitrogen triiodide _____

tetraphosphorous decaoxide _____

iodine pentafluoride _____

hydrofluoric acid _____

copper (II) chloride _____

Part 3 – Short Answer

1. Describe the error in each of the following chemical formulas. Then, write the correct formula.

a) Copper (II) Chloride, CuCl

4 C

b) Rubidium Nitrate, Rb₃N

2. Label each of the following chemical reactions as synthesis, decomposition, combustion, single displacement, or double displacement.



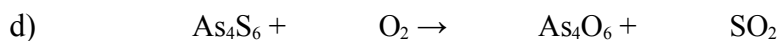
5 K



3. Balance each of the following chemical reactions:



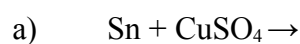
6 T



4. You have heartburn, which is when HCl from your stomach begins to burn your esophagus. You have two things in your medicine cabinet: $\text{Mg}(\text{OH})_2$ or H_2CO_3 . Which should you take? Write a complete (and balanced) chemical reaction for the neutralization of the acid.

3 C

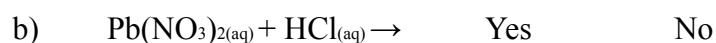
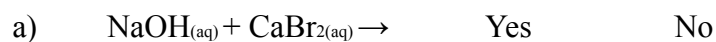
5. Predict the products of the following chemical reactions. You do not have to balance them. If no reaction will occur, write "NR".



5 T



6. Predict whether a solid precipitate will form when the following compounds are mixed. Circle your choice.



4 T

